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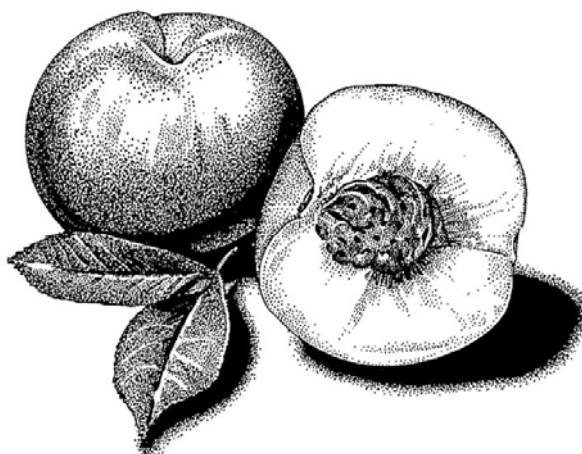
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**UNIVERSITY OF CALIFORNIA COOPERATIVE  
EXTENSION**

**2003**

**SAMPLE COSTS TO ESTABLISH A  
CLING PEACH ORCHARD AND PRODUCE**

# **Cling Peaches**



**SACRAMENTO and SAN JOAQUIN  
VALLEYS**

**Late Harvested Varieties**

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**UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION**  
**SAMPLE COST TO ESTABLISH a CLING PEACH ORCHARD**  
**and PRODUCE CLING PEACHES**  
**Sacramento and San Joaquin Valleys – 2003**  
**Late Harvested Varieties**

**CONTENTS**

INTRODUCTION .....	2
ASSUMPTIONS.....	3
Orchard Establishment Cultural Practices and Material Inputs.....	3
Production Cultural Practices and Material Inputs .....	5
Cash Overhead Costs .....	11
Non-Cash Overhead Costs .....	11
REFERENCES .....	14
Table 1. SAMPLE COSTS PER ACRE TO ESTABLISH A CLING PEACH ORCHARD .....	15
Table 2. COSTS PER ACRE TO PRODUCE CLING PEACHES .....	17
Table 3. COSTS AND RETURNS PER ACRE TO PRODUCE CLING PEACHES .....	19
Table 4. MONTHLY CASH COSTS – CLING PEACHES .....	21
Table 5. WHOLE FARM EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS .....	22
Table 6. HOURLY EQUIPMENT COSTS .....	23
Table 7. RANGING ANALYSIS.....	24
Table 8. COSTS AND RETURNS/BREAKEVEN ANALYSIS .....	25
Table 9. DETAILS BY OPERATION .....	26

**INTRODUCTION**

Sample costs to establish a late harvested variety cling peach orchard and produce cling peaches in the Sacramento and San Joaquin Valleys are presented in this study. This study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on production practices considered typical for the crop and area, but will not apply to every situation. Sample costs for labor, materials, equipment and custom services are based on current figures. A blank column, “Your Costs”, in Tables 2 and 3 is provided to enter your costs.

The hypothetical farm operation, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of the calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, (530) 752-2414 or your local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, 530-752-2414. Current studies can be obtained from selected county UC Cooperative Extension offices or downloaded from the department website at <http://coststudies.ucdavis.edu>.

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## ASSUMPTIONS

The assumptions refer to Tables 1 to 7 and pertain to sample costs to establish a cling peach orchard and produce cling peaches in the Sacramento and San Joaquin Valleys. **Practices described may not be University of California recommendations, but represent production practices and materials considered typical of a well-managed orchard in the region.** The costs, materials, and practices shown in this study will not apply to all situations. Establishment and production cultural practices vary by grower and the differences can be significant. **The use of trade names in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products.**

**Land.** The hypothetical farm consists of 100 contiguous acres. Establishment and production costs are based on the 40 acres being planted to cling peaches. The remaining acreage is in mature tree crops. The grower owns and farms the orchard. Land is valued at \$7,000 per acre.

### Orchard Establishment Cultural Practices and Material Inputs

**Land Preparation.** The orchard is established on ground previously planted to another tree crop. The land is assumed to be well drained and either a class I or II soil. Growers should have nematode sampling done before deciding whether to fumigate or not.

The site is ripped and disced twice to break up any hardpan and pulverize large clods of the soil. The ground is laser leveled by a contract company to remove high and low spots to allow for efficient irrigation. Tree holes are dug by a contract backhoe service, though this is not the standard practice in some regions. After the holes are dug, a fumigation company is contracted to treat for soil borne diseases and pests. Subsequently, berms are constructed in the tree rows to maintain flood irrigation between tree rows. All land preparation operations are contracted and done in the year prior to planting.

**Trees.** It is assumed that a late harvested variety of cling peach is used in this study. The trees are planted on an 18' X 18' spacing or 134 trees per acre. Royalty costs are included in the price of the trees. The life of the orchard at the time of planting in this study is 20 years.

**Planting, Training, and Pruning.** Planting the orchard starts by surveying and marking tree sites. Trees are planted on berms, pruned, painted, and covered with a milk carton. The milk cartons are placed around trees for protection against above ground rodents and herbicide applications and painting protects against sunburn and borers. Pruning, training, and suckering begin the first year and labor time required for pruning increases in the subsequent years.

**Thinning Fruit Limbs.** Cling peaches usually set excessive fruit which need to be thinned to increase peach size. Timing and method of thinning are critical to producing a good crop. Peach variety and weather play a large role in determining the proper time to thin. Normally, the earlier thinning is done after fruit set, the greater the fruit size increase. In this study, thinning is done in May and June starting in the third year when fruit is first harvested. Thinning can be done mechanically, chemically, or by hand. Hand thinning is still the most

common method for thinning and is the practice used in this study. More thinning is required on the early maturing varieties.

**Roping and Wiring Trees.** With vigorous shoot growth and heavy fruit loads, peach trees are susceptible to limb breakage. Growers manage this problem by pruning, thinning and supporting branches using rope and wire. The rope or wire is wrapped around the perimeter of the tree to reduce limb breakage from heavy fruit loads. Nylon rope is typically used to wrap trees in the third through fifth year. The rope is replaced with wire in the sixth year and left permanently around the tree.

**Irrigation.** Water for irrigation is supplied by a water district. The price per acre or acre-foot varies by district in this region. In this study district water costs \$13.80 per acre-foot. This study uses a basin flood irrigation system. Growers pumping well water for irrigation may have higher cost per acre-foot depending on the amount of water pumped, energy source and various well characteristics.

Table A. Annual water applied

Year	Water applied (AcIn)
1	12
2	12
3	24
4	30
5	36
6	42

Furrows are pulled along the tree rows allowing for efficient irrigation during the first year. The annual water requirements assumed in this study are presented in Table A in acre-inches of water for use in the growing season and post-harvest. Post-harvest irrigations are essential, especially for early harvested varieties, through mid September. Water costs can be significantly affected by rainfall. Pumping costs for spring frost protection may also be a consideration.

**Fertilization.** Nitrogen fertilizer is applied for tree growth. Nitrogen (i.e.; ammonium nitrate) is spread along the tree rows beginning the first year. Split applications of N are made in spring and late summer. Annual rates of actual N used in this study are shown in Table B. Zinc is applied as an In-season spray.

Table B. Nitrogen use

Year	Lbs of N/acre	Lbs of N/tree
1	15	0.11
2	30	0.22
3	45	0.34
4	60	0.45
5	80	0.60
6+	100	0.75

**Orchard Floor Management.** Orchard floor management consists of two different areas that are treated differently in order to combat weeds. These areas are row middles, the spaces between the tree rows, and the tree rows or berms where the saplings are actually planted. At planting, weeds in the tree rows are controlled by a single pre-emergent herbicide spray. This is followed annually by mowing the row middles five times during the growing season, one dormant strip spray applied in late fall, winter, or early spring, and two contact herbicide spot sprays for persistent weeds. The two spot sprays clean up weeds missed by the dormant strip spray in the tree rows or kill perennial weeds.

**Insect, Mite, and Disease Management.** Cling peach pest and disease management occurs at different times during the year. This study refers to months for certain pest management practices, but their actual timing is determined by tree growth or pest development. Some of the typical growth stages mentioned are partial bloom, bloom, petal fall, and leaf fall.

During the early years the small tree size requires less material per acre is to effectively treat trees during the establishment years. The first two year's sprays are applied by a sprayer handgun instead of an airblast sprayer. After winter and early spring, control treatments are applied using an airblast sprayer beginning the third year. Treatments of pesticides are made by ground application equipment in this study, but sometimes in the winter or early spring pesticide treatments may be made by aircraft if wet conditions exist on the orchard floor.

Pest and disease control begins in the second year with one dormant spray applied by a sprayer handgun at 40% of the full rate. A full rate is applied in succeeding years. The dormant spray includes oil, an insecticide, and a fungicide to control peach twig borer (PTB), scales, early season mites, shot hole, and peach leaf curl. Oriental fruit moth (OFM) control starts in the third year with three insecticide sprays in May, June, and July.

Treatment for several diseases of cling peaches including brown rot, rust, and powdery mildew begins in the early years. Treatment at full bloom begins in the second year while a 20% bloom spray is added in the third year. The bloom sprays are meant to control brown rot and are sometimes aircraft applied in the Sacramento Valley when very wet. Pesticides are normally applied by a tractor and sprayer in both the San Joaquin and Sacramento Valleys.

In-season sprays are a combination of different pesticides that control several different pests such as mites, OFM, and powdery mildew. A single in-season application is made during the second year. Two more treatments are added in the third year. In the Sacramento Valley, powdery mildew is treated at petal fall and two or more sulfur applications are made to control powdery mildew and rust from April through June depending on rainfall. Rust can be a problem in the Southern San Joaquin Valley in cool, wet springs. Control of shot hole begins at leaf drop in late November.

**Establishment Cost.** The establishment cost is the sum of cash costs for land preparation, planting, trees, production expenses, and cash overhead for growing cling peach trees through the first year fruit is harvested minus any returns from production. The *Total Accumulated Net Cash Cost* in the third year shown in Table 1 represents the establishment cost per acre. For this study, the cost is \$4,298 per acre or \$171,920 for the 40 acres planted to cling peaches. Establishment cost is amortized over the remaining 17 years that the orchard is assumed to be in production. Establishment cost is used to determine the annual capital recovery expense and interest on investment for production years. Establishment costs in this study are based on typical basic operations, but can vary considerably, depending upon terrain, soil type, local regulations, and other factors. For example, development on marginal soils will require additional land preparation and soil amendments. Management/Development companies will have additional labor costs.

## Production Cultural Practices and Material Inputs

**Pruning.** In this study, pruning is done before heavy rainfall with hand crews between October and early December except in the Southern San Joaquin Valley where pruning will continue through early January. In the Sacramento Valley, prunings are stacked in the row middles and bucked (pushed) out of the orchard by a tractor with a brush rake into a pile and burned or shredded in the orchard. Brush bucking and shredding are done during the winter months. In the San Joaquin Valley, prunings are normally shredded in the orchard.

**Fertilization.** Tree nutrient status is determined by leaf analysis; sampling is done in July. Half of the 100 pounds of nitrogen per acre is applied by early spring after leaves have emerged to aid shoot development. The remaining 50 pounds of N is added in late summer after harvest. In this study, urea is used as the nitrogen source.

Some peach orchards may have a potassium deficiency. In those instances, trees may need to have potassium fertilizer applied. Normally, if potassium is added, it is soil applied every two years at a rate of 500 pounds per acre. Application of potassium depends on fertility needs of the trees and will vary by orchard.

**Thinning and Propping.** Thinning is done by hand in May and June. Limbs are propped to prevent limb breakage through the growing season as fruit size increases even though the fruit is thinned. Props are removed at harvest in August. Limbs are propped up to prevent limb breakage. Props are simply boards of varying lengths.

**Orchard Floor Management.** There are many different and acceptable ways of managing orchard floors. For this study, the tree berms are treated differently from the orchard middles. One dormant strip spray combination of pre- and post-emergent herbicides on the berms are applied after the first significant winter rain. Two in-season post emergent spot sprays were needed control perennial weeds. Row middles are mowed five times to control resident vegetation during spring and summer.

**Insect and Mite Management.** In this study, insect and mite management begins with a dormant spray for control of PTB, scale, and certain mite eggs. The dormant spray of horticultural oil, insecticide, and fungicide is made before bud swell during December and January. The three in-season treatments used in this study for OFM and PTB occur in May, June, and July. All of the insect control sprays are made with a tractor and orchard sprayer.

**Disease Management.** Control of bloom, foliar, and fruit diseases become more critical in bearing orchards. Peach leaf curl, brown rot, powdery mildew, shot hole, and rust are the main peach diseases, but other diseases may require treatment. In this study, peach leaf curl and shot hole are treated with a fungicide included in the dormant spray to prevent damage in the subsequent growing season.

Two brown rot treatments are made at bloom in February and March. Sulfur is sprayed at petal fall for powdery mildew and again in April and May for powdery mildew and rust.

Depending on weather, a preharvest fungicide spray is applied in the Sacramento Valley during July or August, but is not normally sprayed in the San Joaquin Valley unless it rains prior to harvest. All of the fungicides are applied using an orchard sprayer except when the orchard is inaccessible to ground sprays.

**Reduced-Risk Insect Management Practices.** Insect pest control can be achieved by a variety of conventional and reduced-risk or alternative management techniques. Effective alternatives to organophosphate and pyrethroid sprays are available for controlling San Jose scale, PTB, OFM, and leafrollers. The following two tables show alternatives to the conventional dormant and in-season sprays.

Growers practicing reduced-risk insect management should add their pest management costs to the Cultural sections on Tables 1 and 2. Materials used for the reduced-risk practices should be added to Table 3.

*Dormant/Bloom Control.* In place of the dormant insecticide, overwintered PTB can be controlled either by two *Bacillus thuringiensis* (Bt) sprays at bloom or one Success (spinosad) spray at bloom. The first Bt spray is applied when 20-40% of the PTB have emerged from their hibernacula. This coincides with a bloom fungicide spray, saving on application costs. The second spray is applied at 80-100% hibernacula emergence which at times coincides with a second fungicide spray. The Success spray is applied at 30 to 70% hibernacula emergence. Treatment costs shown in Table C assume no extra application cost is necessary for the second application of Bt. Material rates and costs for reduced-risk bloom and conventional dormant pest practices not including any labor or equipment costs are shown in Table C.

Costs for conventional dormant and reduced-risk practices, less labor and equipment costs, are shown in Table C. Copper and oil are included in either the conventional dormant or reduced-risk treatments.

Table C. Conventional dormant and reduced-risk Bt treatment programs

Program	Dormant insecticide	Bloom spray/PTB emergence
	----- Material Rates and Costs/Ac -----	
Material rates & costs/acre	1 application of Diazinon @ 3-4 lbs or Asana @ 8 oz or Lorsban	2 Bt sprays @ 1 lb or 1qt or 1 Success spray @ 4 oz
Program Costs	\$7.00 – 24.72	\$20.00 – 22.00

Source: 2002 Stone Fruit Pest Management Alliance Annual Report, Sutter County.

*In-Season Control.* For in-season control of OFM and PTB, mating disruption (also called pheromone confusion) can be very effective in low to moderate populations. In a complete program, OFM and PTB pheromone dispensers are placed in each tree (rate depends on product) at biofix (first moth). This occurs in late February or early March for OFM and sometime in April or May for PTB. Most products last 90 days, so pheromone dispensers are applied again in June. PTB dispensers are usually applied with the OFM dispensers to save on application costs. There is also a dual OFM/PTB dispenser that is often used during the PTB application timing. In this complete mating disruption program, pheromones are used for season long control through late August/early September.

Because of the greater expense of a complete in-season mating disruption program compared to a conventional insecticide program, many growers integrate mating disruption with a program shown in Table D. This approach reduces the overall insecticides applied and helps with resistance management. With the complete program, there is season long mating disruption whereas with other programs, this is rarely achieved. There are many possible combinations of pheromone mating disruption or pheromone mating disruption plus spray programs. These include but are not limited to:

- 1) OFM dispensers at first biofix, in-season sprays as needed.
- 2) OFM-Flowable at first biofix and 30 days later, OFM dispenser or the Stonefruit (SF) dispenser (OFM + PTB) by May 1.
- 3) One 120+ day OFM dispenser, in-season sprays as needed for OFM or PTB.
- 4) Targeting OFM spray timing and including OFM flowable with May, June and July spray (if needed).
- 5) Targeting PTB spray timing and including OFM flowable with May spray, only OFM flowable in June, an insecticide for July spray.

Either Bt or Spinosad can be used as effective reduced-risk materials as a substitute to mating disruption for in-season PTB control.

Most pheromone dispensers are applied to the top one-third of tree canopy using poles from the ground. OFM flowable is applied using a tractor and orchard sprayer.

Table D. In-season conventional and reduced-risk insect pest control programs and costs/acre.

Program	Conventional program	Mating Disruption		
		Complete program	Integrated program #1	Integrated program #4 or #5
Material Rates & Costs	2 applications of Asana @ 10 oz plus 1 application of Imidan @ 4 lb, 1 application of Acramite @ 1 lb	2 OFM pheromone dispenser applications plus 1-2 PTB dispenser applications plus 1 miticide application	1 OFM pheromone dispenser application plus 1 Asana @10 oz plus 1 Acaramite application @ 1 lb	2 flowable pheromone applications plus 2 Asana @ 10 oz plus 1 Acaramite application @ 1 lb
Program Costs	\$121 – 130	\$189 – 232	\$49 (\$119 with miticide)	\$48 (\$118 with miticide)

Source: 2002 Stone Fruit Pest Management Alliance Annual Report, Sutter County.

The material costs of the complete mating disruption program shown in Table D range from \$31 to \$65 per acre or more than a conventional spray program with a miticide. Cost of the materials for the integrated programs cost less if there is no miticide added than the conventional in-season spray program and \$71-114 per acre less than the complete mating disruption program.

**Pesticide Recommendations.** Not all treatments mentioned in this report will be needed every year. Other materials other than those discussed in this report are available for labeled use on this crop. For specific pesticides choices and rates consult the publication UC IPM Pest Management Guidelines, Peaches & Nectarines or can be accessed online at <http://www.ipm.ucdavis.edu/PMG/crops-agriculture.html>. Written recommendations made by



licensed pest control advisors are required for many pesticides. For information and pesticide use permits, contact the local county Agricultural Commissioner's office.

**Equipment Cash Costs.** Equipment costs fall into three categories; capital recovery, cash overhead, and operating costs. The cash overhead and capital recovery costs will be discussed in later sections. The operating costs consist of fuel, lubrication, and repairs.

Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO hp, and type of fuel used. The fuel and repair cost per acre for each operation in Table 2 is determined by multiplying the total hourly operating cost in Table 6 for each piece of equipment used for the cultural practice by the number of hours per acre for that operation. Tractor time is 10% higher than implement time (Operation Time) for a given operation to account for fueling, moving equipment, and setup time. Prices for on-farm delivery of diesel and gasoline are \$1.11 and \$1.58 per gallon, respectively.

**Harvest.** Harvest starts in the third year after the orchard is planted. Yield maturity is reached between the fifth and seventh year. In this cost study the grower contracts to have the cling peach crop harvested. Peaches are hand picked, field sorted, placed into bins left throughout the orchard, and moved out of the orchard to the roadside where the bins are loaded on to trucks and hauled to the processor. All costs for contracted harvest operations are on a per acre basis.

**Assessment.** The Cling Peach Advisory Board (CPAB) assesses all cling peaches commercially grown in the state to pay for cling peach promotion and research. The mandatory assessment is \$2.90 per ton.

The California Canning Peach Association is a grower organization which negotiates contract prices with processors and supports cling peach research. Membership is voluntary and the assessment rate is 1% of growers' gross returns.

**Yields and Returns** Cling peaches begin bearing an economic crop in the third year after planting. Yields fluctuate by grower and region annually. Nine counties produce the majority of the reported cling peaches grown in California and the United States. Yields for the previous five years are shown by county in Table E.

Table E. Annual cling peach yields by county, 1997-2002

County	1997	1998	1999	2000	2001
			tons/acre		
Butte	39,000	33,170	28,504	32,474	33,210
Fresno	24,000	29,500	38,600	22,500	23,200
Kings	23,202	20,919	20,638	20,304	19,752
Madera	NA <sup>§</sup>	NA <sup>§</sup>	18,200	21,278	9,654
Merced	74,686	61,536	59,817	75,908	65,826
San Joaquin	34,000	31,400	44,600	45,700	40,600
Stanislaus	160,000	140,000	125,500	135,600	119,000
Sutter	124,512	153,156	173,863	183,512	151,141
Tulare	30,900	28,300	27,200	24,200	18,700
Yuba	91,117	79,208	79,208	NA <sup>§</sup>	NA <sup>§</sup>

Source: CDFA, State Crop Reports, 1998 - 2002.

<sup>§</sup> NA = Not Available

Typical annual yields used in this study for cling peaches are measured in tons per acre as shown in Table F. Yields are from the third year of orchard establishment to maturity. An estimated price of \$235 per ton is used in this study to determine potential profits/losses. The yields and prices used in this cost study are estimates for current situations. Table 7 shows income, costs, and net returns at varying yields and prices.

Table F. Annual yield per acre

Year	Tons
3	6.0
4	12.0
5	15.0
6	18.0
7+	20.0

**Risk.** The risks associated with producing and marketing late harvested cling peaches should not be minimized. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks which affect the profitability and economic viability of cling peach production. A market channel should be determined before cling peaches are planted and brought into production. Though, not used in this study, crop insurance is a risk management tool available to growers.

**Pickup/ATV.** The grower uses the pickup for business and personal use. It is assumed that 5,000 miles are for business use. The ATV is used for inspecting and monitoring the orchard. It is also used for irrigating and checking the system, but is not included as an irrigation cost.

**Labor.** Labor rates of \$10.00 per hour for machine operators and \$8.00 for general labor includes payroll overhead of 45%. The basic hourly wages are \$14.50 for machine operators and \$11.60 for general labor. The overhead includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for fruit orchards (code 0016), and a percentage for other possible benefits. Workers' compensation insurance costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2003 (California Department of Insurance). Labor for operations involving machinery are 20% higher than the operation time given in Table 1 and 4 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

**Interest On Operating Capital.** Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 7.14% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge. To prevent a negative calculation in this study, interest is calculated based on an August harvest. The monthly interest is then distributed in Table 4 beginning in September after the August harvest, which corresponds to the month following the August harvest date.

## Cash Overhead Costs

(Tables 1-7)

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, sanitation services, equipment repairs, and management.

**Property Taxes.** Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

**Insurance.** Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.676% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$516 for the entire farm.

**Office Expense.** Office and business expenses are estimated at \$42 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, shop and office utilities, and miscellaneous administrative charges.

**Sanitation Services.** Sanitation services provide portable toilets for the orchard and cost the farm \$432 annually. The cost includes a double toilet, delivery and 2 months of weekly service.

**Investment Repairs.** Annual maintenance is calculated as 2% of the purchase price.

## Non-Cash Overhead Costs

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

**Capital Recovery Costs.** Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is

$$\left[ \left( \frac{\text{Purchase Price}}{\text{Value}} - \frac{\text{Salvage Value}}{\text{Value}} \right) \times \left( \text{Recovery Factor}^{\text{Capital}} \right) \right] + \left[ \frac{\text{Salvage Value} \times \text{Interest Rate}}{\text{Value}} \right]$$

*Salvage Value.* Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE, by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate.

*Capital Recovery Factor.* Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

*Interest Rate.* The interest rate of 6.25% used to calculate capital recovery cost is the USDA-ERS's ten-year average of California's agricultural sector long-run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector. In other words, the next best alternative use for these resources is in another agricultural enterprise.

**Land.** Cling peach orchards range in value from \$7,000 to \$13,500, whereas tree crops (almonds, walnuts, etc.) range from \$4,500 to \$15,500. Because that the orchard is established on land previously planted to tree crops, the land in this study is valued at \$7,000 per acre.

**Irrigation System.** The orchard is irrigated using a flood irrigation system. Water is delivered to the orchard from the district ditch and distributed through to the orchard by way of underground mainlines and valves. The life of the irrigation system is estimated at 40 years. The irrigation system is installed before the orchard is planted. The irrigation system is considered an improvement to the property and is shown in the capital recovery sections of Tables 1-3 and the Investments portion of Table 5.

**Building.** The shop building is a 1,800 square foot metal building or buildings on a cement slab.

**Shop Tools, Pruning Equipment, and Ladders.** This includes an assortment of shop tools, various pruning equipment, and 14 foot orchard ladders. The ladders are used for pruning and harvesting.

**Fuel Tanks.** Two 250-gallon fuel tanks using gravity feed are on metal stands. The tanks are setup in a cement containment pad that meets federal, state, and county regulations.

**Equipment.** Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

**Table Values.** Due to rounding, the totals may be slightly different from the sum of the components.

**Acknowledgment.** Appreciation is expressed to those growers and other cooperators who provided information for this study.

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Table 1.

U.C. COOPERATIVE EXTENSION  
 SAMPLE COSTS PER ACRE TO ESTABLISH A CLING PEACH ORCHARD  
 SACRAMENTO AND SAN JOAQUIN VALLEYS – 2003  
 LATE HARVESTED VARIETIES

Labor Rate: \$14.50/hr. machine labor  
 \$11.60/hr. non-machine labor

Trees Per Acre: 134  
 Short Term Interest Rate: 7.14%

Year	Cost Per Acre					
	1st	2nd	3rd	4th	5th	6th
Tons Per Acre			6.0	12.0	15.0	18.0
Land Preparation - Leveling: contract	125					
Land Preparation - Backhoe Tree Holes	322					
Land Preparation - Fumigate: contract	850					
Land Preparation - Put Up Berms	5					
Trees: 134 Per Acre (4% Replant In 2nd Year)	677	\$25				
Survey & Mark Orchard	33					
Plant, Paint Trunk, Add Milk Cartons	102	102				
<b>TOTAL PLANTING COSTS</b>	<b>2,299</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Cultural Costs:						
Prune, Train, & Sucker	9	107	\$160	\$187	\$231	\$231
Brush Disposal			13	13	13	13
Pest Control - Dormant Spray		31	55	55	55	55
Disease Control - Bloom Sprays 2X		43	81	81	81	81
Weed Control - Mow Middles 5X	64	64	64	64	64	64
Weed Control - Spray Berms	34					
Fertilize 2X	24	32	39	47	51	56
Disease Control - Mildew/Rust Spray 2X		37	52	52	52	52
Furrow Middles	5	5	5	5		5
Irrigate 8X	43	43	57	64	71	78
Wire/Rope Trees			59	59	59	61
Weed Control - Spot Spray 2X	20	20	20	20	20	20
Insect Control - In-Season Spray (2X in Year 1) 3X	68	89	155	155	155	155
Summer Pruning		12	35	35	35	35
Leaf Analysis			2	2	2	2
Weed Control - Dormant Strip Spray	29	29	29	29	29	29
Thin/Remove Fruit			268	335	402	469
Pickup Truck Use	69	69	69	69	69	69
ATV Truck Use	56	55	55	55	55	55
<b>TOTAL CULTURAL COSTS</b>	<b>421</b>	<b>636</b>	<b>1,218</b>	<b>1,327</b>	<b>1,444</b>	<b>1,530</b>
Harvest Costs:						
Bin Distribution			2	3	4	6
Pick Fruit & Field Sort			330	660	825	990
Haul Fruit			30	60	75	90
Cling Peach Advisory Board Assessment			17	35	43	52
<b>TOTAL HARVEST COSTS</b>	<b>0</b>	<b>0</b>	<b>379</b>	<b>758</b>	<b>947</b>	<b>1,138</b>
Interest On Operating Capital @ 7.14%	83	16	34	39	43	45
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>2,803</b>	<b>779</b>	<b>1,631</b>	<b>2,124</b>	<b>2,434</b>	<b>2,713</b>
Cash Overhead Costs:						
Office Expense	42	42	42	42	42	42
Liability Insurance	5	5	5	5	5	5
Sanitation Fees	4	4	4	4	4	4
Property Taxes	81	83	83	83	87	88
Property Insurance	8	9	9	9	12	12
Investment Repairs	23	23	23	23	23	23
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>163</b>	<b>166</b>	<b>166</b>	<b>166</b>	<b>173</b>	<b>174</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>2,966</b>	<b>945</b>	<b>1,797</b>	<b>2,290</b>	<b>2,607</b>	<b>2,887</b>
<b>INCOME/ACRE FROM PRODUCTION</b>	<b>0</b>	<b>0</b>	<b>1,410</b>	<b>2,820</b>	<b>3,525</b>	<b>4,230</b>
<b>NET CASH COSTS/ACRE FOR THE YEAR</b>	<b>2,966</b>	<b>945</b>	<b>387</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>PROFIT/ACRE ABOVE CASH COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>530</b>	<b>918</b>	<b>1,343</b>
<b>ACCUMULATED NET CASH COSTS/ACRE</b>	<b>2,966</b>	<b>3,911</b>	<b>4,298</b>	<b>3,768</b>	<b>2,850</b>	<b>1,507</b>

U.C. COOPERATIVE EXTENSION  
Table 1. continued

Year	Cost Per Acre					
	1st	2nd	3rd	4th	5th	6th
Tons Per Acre			6.0	12.0	15.0	18.0
Capital Recovery Cost:						
Land @ \$7,000 Per Acre	438	438	438	438	438	438
Shop Building	31	31	31	31	31	31
Flood Irrigation System	37	37	37	37	37	37
Fuel Tanks & Pumps	2	2	2	2	2	2
Pruning Equipment	2	2	2	2	2	2
Shop Tools	13	13	13	13	13	13
Equipment	<u>102</u>	<u>135</u>	<u>131</u>	<u>133</u>	<u>216</u>	<u>231</u>
TOTAL CAPITAL RECOVERY COST	625	658	654	656	739	754
TOTAL COST/ACRE FOR THE YEAR	3,591	1,603	2,451	2,946	3,346	3,641
INCOME/ACRE FROM PRODUCTION	0	0	1,410	2,820	3,525	4,230
TOTAL NET COST/ACRE FOR THE YEAR	3,591	1,603	1,041	126	0	0
NET PROFIT/ACRE ABOVE TOTAL COST	0	0	0	0	179	589
TOTAL ACCUMULATED NET COST/ACRE	3,591	5,194	6,235	6,361	6,182	5,593



Table 2.

UC COOPERATIVE EXTENSION  
 COSTS PER ACRE TO PRODUCE CLING PEACHES  
 SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
 LATE HARVESTED VARIETIES

Labor Rate: \$14.50/hr. machine labor  
 \$11.60/hr. non-machine labor

Interest Rate: 7.14  
 Yield per Acre: 20 Ton

Operation	Operation Time (Hrs/A)	----- Cash and Labor Costs per Acre -----					Total Cost	Your Cost
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent			
Cultural:								
Prune, Train, & Sucker	34.50	400	0	0	0	400		
Pest Control - Dormant Spray	0.50	9	6	40	0	55		
Tree Wire Repairs	1.50	17	0	5	0	22		
Pest Control - 20% Bloom Spray	0.50	9	6	28	0	43		
Pest Control - Full Bloom Spray	0.50	9	6	23	0	38		
Brush Disposal	0.40	7	6	0	0	13		
Weed Control - Mow Middles 5X	2.00	35	29	0	0	64		
Pest Control - Rust/Mildew 2X	1.00	17	13	22	0	52		
Fertilize N - 100 Lbs N/Acre	0.33	6	3	11	0	20		
Irrigate 8X	2.24	26	0	42	0	68		
Weed Control - Spot Spray 2X	0.67	12	6	3	0	20		
Pest Control - In-Season 3X	1.50	26	19	110	0	155		
Thin/Remove Fruit	21.68	251	0	0	0	251		
Summer Pruning	12.00	139	0	0	0	139		
Prop Limbs	0.25	28	2	0	0	29		
Leaf Analysis	0.00	0	0	0	2	2		
Pickup Truck Use	2.85	50	20	0	0	69		
ATV Use	<u>2.85</u>	<u>50</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>56</u>		
<b>TOTAL CULTURAL COSTS</b>	<b>85.27</b>	<b>1,090</b>	<b>123</b>	<b>284</b>	<b>2</b>	<b>1,499</b>		
Harvest:								
Bin Field Distribution	1.00	17	7	0	0	25		
Hand Pick and Field Sort Fruit	0.00	0	0	0	1,100	1,100		
Haul Fruit	0.00	0	0	0	100	100		
CPAB Assessment	<u>0.00</u>	<u>0</u>	<u>0</u>	<u>58</u>	<u>0</u>	<u>58</u>		
<b>TOTAL HARVEST COSTS</b>	<b>1.00</b>	<b>17</b>	<b>7</b>	<b>58</b>	<b>1,200</b>	<b>1,283</b>		
Postharvest:								
Fertilize N - 100 Lbs N/Acre	0.33	6	3	11	0	20		
Irrigate 8X	0.32	4	0	6	0	10		
Weed Control - Dormant Strip	<u>0.33</u>	<u>6</u>	<u>3</u>	<u>20</u>	<u>0</u>	<u>29</u>		
<b>TOTAL POSTHARVEST COSTS</b>	<b>0.99</b>	<b>15</b>	<b>6</b>	<b>37</b>	<b>0</b>	<b>58</b>		
Interest on operating capital @ 7.14%						47		
<b>TOTAL OPERATING COSTS/ACRE</b>		<b>1,122</b>	<b>136</b>	<b>379</b>	<b>1,202</b>	<b>2,887</b>		
CASH OVERHEAD:								
Office Expense						42		
Liability Insurance						5		
Sanitation Fees						4		
Property Taxes						106		
Property Insurance						24		
Investment Repairs						<u>23</u>		
<b>TOTAL CASH OVERHEAD COSTS</b>						<b>204</b>		
<b>TOTAL CASH COSTS/ACRE</b>						<b>3,091</b>		

U.C. COOPERATIVE EXTENSION  
Table 2. continued

NON-CASH OVERHEAD:	Per producing <u>Acres</u>	-- Annual Cost -- <u>Capital Recovery</u>	
Investment			
Buildings 1,800 SqFt	410	31	31
Flood Irrigation System	541	37	37
Fuel Tanks: 2 - 250 Gallon	37	2	2
Land	7,000	438	438
Pruning Equipment	15	2	2
Shop Tools	129	13	13
Orchard Establishment Cost	4,298	418	418
Equipment	<u>1,314</u>	<u>155</u>	<u>155</u>
<b>TOTAL NON-CASH OVERHEAD COSTS</b>	<b>13,744</b>	<b>1,095</b>	<b>1,095</b>
<b>TOTAL COSTS/ACRE</b>			<b>4,186</b>

Table 3.

UC COOPERATIVE EXTENSION  
 COSTS AND RETURNS PER ACRE TO PRODUCE CLING PEACHES  
 SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
 LATE HARVESTED VARIETIES

Labor Rate: \$14.50/hr. machine labor  
 \$11.60/hr. non-machine labor

Interest Rate: 7.14%

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Cling Peach	20.0	Ton	235	<u>4,700</u>	
<b>TOTAL GROSS RETURNS FOR CLING PEACHES</b>				<u>4,700</u>	
<b>OPERATING COSTS</b>					
Insecticide:					
Supreme Oil	6.00	Gal	3	17	
Asana XL	36.80	FLOz	1	32	
Checkmate OFM (F)	3.90	FLOz	8	29	
Fungicide:					
Kocide 101	10.00	Lb	2	19	
Rovral 4FL	1.50	Pint	17	25	
Elite WP	6.00	Oz	3	20	
Rally 40W	5.00	Oz	4	20	
Sulfur - Wettable	26.00	Lb	0	5	
Tree Aids:					
Tree Wire	1.00	Acre	5	5	
Fertilizer:					
Zinc Sulfate 36%	5.00	Lb	0	2	
Urea 46-0-0	100.00	Lb N	0	22	
Irrigation:					
Water - District	42.00	Acln	1	48	
Herbicide:					
Roundup	1.60	Pint	5	7	
Surflan 4 AS	1.50	Pint	10	16	
Miticide:					
Acramite	0.75	Lb	70	53	
Custom:					
Leaf Analysis	1.00	Acre	2	2	
Harvest - Hand	20.00	Ton	55	1,100	
Haul Fruit	20.00	Ton	5	100	
Assessment:					
CPAB Assessment Fee	20.00	Ton	3	58	
Labor (machine)	18.02	Hrs	15	261	
Labor (non-machine)	74.24	Hrs	12	861	
Fuel - Gas	7.59	Gal	2	12	
Fuel - Diesel	32.79	Gal	1	36	
Lube				7	
Machinery repair				81	
Interest on operating capital @ 7.14%				<u>47</u>	
<b>TOTAL OPERATING COSTS/ACRE</b>				<u>2,887</u>	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				<u>1,813</u>	
<b>CASH OVERHEAD COSTS:</b>					
Office Expense				42	
Liability Insurance				5	
Sanitation Fees				4	
Property Taxes				106	
Property Insurance				24	
Investment Repairs				<u>23</u>	
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>				<u>204</u>	
<b>TOTAL CASH COSTS/ACRE</b>				<u>3,091</u>	

U.C. COOPERATIVE EXTENSION  
Table 3. continued

NON-CASH OVERHEAD COSTS (CAPITAL RECOVERY):	
Buildings: 1,800 SqFt	31
Flood Irrigation System	37
Fuel Tanks: 2 - 250 Gallon	2
Land	438
Pruning Equipment	2
Shop Tools	13
Orchard Establishment Cost	418
Equipment	<u>155</u>
TOTAL NON-CASH OVERHEAD COSTS/ACRE	1,095
TOTAL COSTS/ACRE	<u>4,186</u>
NET RETURNS ABOVE TOTAL COSTS	<u>514</u>

Table 4.

UC COOPERATIVE EXTENSION  
MONTHLY CASH COSTS - CLING PEACHES  
SACRAMENTO AND SAN JOAQUIN VALLEYS – 2003  
LATE HARVESTED VARIETIES

Beginning DEC 02	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	TOTAL
Ending NOV 03	02	03	03	03	03	03	03	03	03	03	03	03	
Cultural:													
Prune, Train, & Sucker	133	133	133										400
Pest Control - Dormant Spray	55												55
Tree Wire Repairs		22											22
Disease Control - 20% Bloom Spray			43										43
Disease Control - Full Bloom Spray			38										38
Brush Disposal			13										13
Weed Control - Mow Middles 5X			13	13	26	13							64
Disease Control - Rust/Mildew Sprays 2X				35		17							52
Fertilize N - 100 Lbs N/Acre 2X				20									20
Irrigate 7X				10	19	19	19						68
Weed Control - Spot Spray 2X				10		10							20
Insect Control - In-Season 3X						35	34	86					155
Thin/Remove Fruit						251							251
Summer Pruning						139							139
Prop Limbs						29							29
Leaf Analysis								2					2
Pickup Truck Use	6	6	6	6	6	6	6	6	6	6	6	6	69
ATV Use	5	5	5	5	5	5	5	5	5	5	5	5	56
<b>TOTAL CULTURAL COSTS</b>	<b>200</b>	<b>167</b>	<b>251</b>	<b>99</b>	<b>56</b>	<b>526</b>	<b>65</b>	<b>99</b>	<b>11</b>	<b>11</b>	<b>11</b>		<b>1,499</b>
Harvest:													
Bin Field Distribution								25					25
Hand Pick and Field Sort								1,100					1,100
Haul Fruit								100					100
CPAB Assessment								58					58
<b>TOTAL HARVEST COSTS</b>								<b>1,283</b>					<b>1,283</b>
Postharvest:													
Fertilize N - 100 Lbs N/A 2X								20					20
Irrigate 7X								10					10
Weed Control - Dormant Strip Spray											29		29
<b>TOTAL POSTHARVEST COSTS</b>								<b>29</b>			<b>29</b>		<b>58</b>
Interest on Operating Capital <sup>§</sup>	1	2	4	4	5	8	8	17	0	0	0		47
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>201</b>	<b>169</b>	<b>255</b>	<b>103</b>	<b>61</b>	<b>534</b>	<b>73</b>	<b>1,428</b>	<b>11</b>	<b>11</b>	<b>40</b>		<b>2,887</b>
CASH OVERHEAD:													
Office Expense	4	4	4	4	4	4	4	4	4	4	4		42
Liability Insurance		5											5
Sanitation Fees	0	0	0	0	0	0	0	0	0	0	0		4
Property Taxes		53						53					106
Property Insurance		12						12					24
Investment Repairs	2	2	2	2	2	2	2	2	2	2	2	2	23
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>6</b>	<b>76</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>71</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>2</b>	<b>204</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>207</b>	<b>245</b>	<b>261</b>	<b>109</b>	<b>67</b>	<b>540</b>	<b>80</b>	<b>1,499</b>	<b>17</b>	<b>17</b>	<b>46</b>	<b>2</b>	<b>3,091</b>

<sup>§</sup> See operating capital under Assumptions

Table 5. UC COOPERATIVE EXTENSION  
 WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS  
 SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
 LATE HARVESTED VARIETIES

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	----- Cash Overhead-----		Total
						Insur- ance	Taxes	
03	55 HP 2WD Tractor	32,269	15	6,282	3,112	130	193	3,435
03	66 HP 2WD Tractor	36,500	15	7,106	3,520	147	218	3,886
03	ATV 4WD	7,430	7	2,818	1,010	35	51	1,096
03	Bin Trailer	1,100	15	106	111	4	6	121
03	Bin Trailer	1,100	15	106	111	4	6	121
03	Bin Trailer	1,100	15	106	111	4	6	121
03	Bin Trailer	1,100	15	106	111	4	6	121
03	Mower - Flail 10'	10,272	10	1,817	1,276	41	60	1,377
03	Orchard Sprayer - 500 Gallon	19,741	10	3,491	2,452	79	116	2,647
03	Pickup Truck - 3/4 Ton	27,340	7	10,371	3,715	127	189	4,031
03	Spinner Spreader - 3 Point	1,565	20	82	137	6	8	151
03	Utility Trailer	1,800	20	94	158	6	9	174
03	Weed Sprayer - 100 Gallon	3,424	10	342	445	13	19	477
TOTAL <sup>§</sup>		144,741		32,827	16,268	600	888	17,756

<sup>§</sup> Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	----- Cash Overhead -----			Total
					Insur- ance	Taxes	Repairs	
INVESTMENT								
Buildings: 1,800 Sq Ft	41,000	30		3,059	139	205	820	4,222
Orchard Establishment	171,920	17		16,705	581	860	0	18,146
Flood Irrigation	54,146	40	5,415	3,680	201	298	1,083	5,262
Fuel Tanks: 2 - 250 Gallon	3,650	40	350	248	14	20	73	355
Land	700,000	25	700,000	43,750	0	7,000	0	50,750
Pruning Equipment	1,492	10	149	194	6	8	30	238
Shop Tools	12,879	15	1,288	1,294	48	71	258	1,670
TOTAL INVESTMENT	985,087		707,202	68,929	988	8,461	2,264	80,643

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/		Price/ Unit	Total Cost
	Farm	Unit		
Liability Insurance	100	Acre	5.16	516
Office Expense	100	Acre	42.00	4,200
Sanitation Fees	100	Acre	4.36	436

Table 6.

UC COOPERATIVE EXTENSION  
 HOURLY EQUIPMENT COSTS  
 SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
 LATE HARVESTED VARIETIES

		----- COSTS PER HOUR -----							
		Actual		- Cash Overhead -		----- Operating -----			
Yr	Description	Hours Used	Capital Recovery	Insur- ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
03	55 HP 2WD Tractor	800.0	3.89	0.16	0.24	2.31	3.45	5.76	10.05
03	66 HP 2WD Tractor	899.9	3.91	0.16	0.24	2.61	4.14	6.75	11.07
03	ATV 4WD	285.0	3.54	0.12	0.18	0.91	1.21	2.12	5.96
03	Bin Trailer	166.0	0.67	0.02	0.04	0.26	0.00	0.26	0.99
03	Bin Trailer	166.0	0.67	0.02	0.04	0.26	0.00	0.26	0.99
03	Bin Trailer	166.0	0.67	0.02	0.04	0.26	0.00	0.26	0.99
03	Bin Trailer	166.0	0.67	0.02	0.04	0.26	0.00	0.26	0.99
03	Furrowing Bar	200.0	6.38	0.20	0.30	7.08	0.00	7.08	13.97
03	Mower - Flail 10'	200.0	12.26	0.39	0.58	5.57	0.00	5.57	18.80
03	Orchard Sprayer - 500 Gallon	285.0	13.04	0.45	0.66	3.34	3.63	6.97	21.11
03	Pickup Truck - 3/4 Ton	59.7	2.30	0.09	0.14	0.96	0.00	0.96	3.49
03	Spinner Spreader - 3 Point	150.0	1.05	0.04	0.06	0.44	0.00	0.44	1.60
03	Weed Sprayer - 100 Gallon	150.0	2.97	0.08	0.13	1.52	0.00	1.52	4.70

Table 7.

UC COOPERATIVE EXTENSION  
RANGING ANALYSIS  
SACRAMENTO AND SAN JOAQUIN VALLEYS – 2003  
LATE HARVESTED VARIETIES

	COSTS PER ACRE AT <b>VARYING YIELDS</b> TO PRODUCE CLING PEACHES						
	YIELD (TON/ACRE)						
	14.0	16.0	18.0	20.0	22.0	24.0	26.0
<b>OPERATING COSTS/ACRE:</b>							
Cultural Cost	1,499	1,499	1,499	1,499	1,499	1,499	1,499
Harvest Cost	893	1,023	1,153	1,283	1,413	1,543	1,673
Postharvest Cost	58	58	58	58	58	58	58
Interest on operating capital	45	46	47	47	48	49	50
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>2,495</b>	<b>2,626</b>	<b>2,756</b>	<b>2,887</b>	<b>3,018</b>	<b>3,149</b>	<b>3,279</b>
<b>TOTAL OPERATING COSTS/TON</b>	<b>178</b>	<b>164</b>	<b>153</b>	<b>144</b>	<b>137</b>	<b>131</b>	<b>126</b>
<b>CASH OVERHEAD COSTS/ACRE</b>	<b>204</b>	<b>204</b>	<b>204</b>	<b>204</b>	<b>204</b>	<b>204</b>	<b>204</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>2,698</b>	<b>2,829</b>	<b>2,960</b>	<b>3,091</b>	<b>3,222</b>	<b>3,353</b>	<b>3,483</b>
<b>TOTAL CASH COSTS/TON</b>	<b>193</b>	<b>177</b>	<b>164</b>	<b>155</b>	<b>146</b>	<b>140</b>	<b>134</b>
<b>CAPITAL RECOVERY COSTS/ACRE</b>	<b>1,094</b>	<b>1,094</b>	<b>1,095</b>	<b>1,095</b>	<b>1,096</b>	<b>1,096</b>	<b>1,097</b>
<b>TOTAL COSTS/ACRE</b>	<b>3,792</b>	<b>3,924</b>	<b>4,055</b>	<b>4,186</b>	<b>4,318</b>	<b>4,449</b>	<b>4,580</b>
<b>TOTAL COSTS/TON</b>	<b>271</b>	<b>245</b>	<b>225</b>	<b>209</b>	<b>196</b>	<b>185</b>	<b>176</b>

NET RETURNS PER ACRE <b>ABOVE OPERATING COSTS</b> FOR CLING PEACHES							
PRICE (DOLLARS/TON)	YIELD (TON/ACRE)						
	14.0	16.0	18.0	20.0	22.0	24.0	26.0
Cling Peaches							
205	375	654	934	1,213	1,492	1,771	2,051
215	515	814	1,114	1,413	1,712	2,011	2,311
225	655	974	1,294	1,613	1,932	2,251	2,571
235	795	1,134	1,474	1,813	2,152	2,491	2,831
245	935	1,294	1,654	2,013	2,372	2,731	3,091
255	1,075	1,454	1,834	2,213	2,592	2,971	3,351
265	1,215	1,614	2,014	2,413	2,812	3,211	3,611

NET RETURN PER ACRE <b>ABOVE CASH COST</b> FOR CLING PEACHES							
PRICE (DOLLARS/TON)	YIELD (TON/ACRE)						
	14.0	16.0	18.0	20.0	22.0	24.0	26.0
Cling Peaches							
205	172	451	730	1,009	1,288	1,567	1,847
215	312	611	910	1,209	1,508	1,807	2,107
225	452	771	1,090	1,409	1,728	2,047	2,367
235	592	931	1,270	1,609	1,948	2,287	2,627
245	732	1,091	1,450	1,809	2,168	2,527	2,887
255	872	1,251	1,630	2,009	2,388	2,767	3,147
265	1,012	1,411	1,810	2,209	2,608	3,007	3,407

NET RETURNS PER ACRE <b>ABOVE TOTAL COST</b> FOR CLING PEACHES							
PRICE (DOLLARS/TON)	YIELD (TON/ACRE)						
	14.0	16.0	18.0	20.0	22.0	24.0	26.0
Cling Peaches							
205	-922	-644	-365	-86	192	471	750
215	-782	-484	-185	114	412	711	1,010
225	-642	-324	-5	314	632	951	1,270
235	-502	-164	175	514	852	1,191	1,530
245	-362	-4	355	714	1,072	1,431	1,790
255	-222	156	535	914	1,292	1,671	2,050
265	-82	316	715	1,114	1,512	1,911	2,310



Table 8.

UC COOPERATIVE EXTENSION  
 COSTS AND RETURNS/BREAKEVEN ANALYSIS  
 SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
 LATE HARVESTED VARIETIES

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Cling Peaches	4,700	2,887	1,813	3,091	1,609	4,186	514

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Cling Peaches	188,000	115,485	72,515	123,638	64,362	167,451	20,549

BREAKEVEN PRICES PER YIELD UNIT

CROP	Base Yield (Units/Acre)	Yield Units	----- Breakeven Price To Cover -----		
			Operating Costs	Cash Costs	Total Costs
Cling Peaches	20.0	Ton	144.36	154.55	209.31

BREAKEVEN YIELDS PER ACRE

CROP	Yield Units	Base Price (\$/Unit)	----- Breakeven Yield To Cover -----		
			Operating Costs	Cash Costs	Total Costs
Cling Peaches	Ton	235.00	12.3	13.2	17.8

Table 9.

UC COOPERATIVE EXTENSION  
DETAIL BY OPERATION  
SACRAMENTO AND SAN JOAQUIN VALLEYS - 2003  
LATE HARVESTED VARIETIES

Operation	Operation Month	Tractor/ Power Unit	Implement	Material	Broadcast Rate/acre	Material Unit
<b>Cultural:</b>						
Prune Train & Sucker	December	Labor				
	January					
	February					
Disease Control - Dormant Spray	December	66 HP 2WD Tractor	Orchard Sprayer	Supreme Oil	5.00	Gal
				Kocide 101	10.00	Lb
				Asana XL	8.00	Fl Oz
Tree Wire Repairs	January	Labor		Wire		
Disease Control – - 20% Bloom Spray	February	66 HP 2WD Tractor	Orchard Sprayer	Rovral 4FL	1.50	Pint
				Supreme Oil	1.00	Gal
Disease Control – - Full Bloom Spray	February	66 HP 2WD Tractor	Orchard Sprayer	Elite WP	6.00	Oz
				Zinc Sulfate	5.00	Lb
Brush Disposal	February	66 HP 2WD Tractor	Flail Mower			
Weed Control – - Mow Middles 5X	February	66 HP 2WD Tractor	Flail Mower			
	March	66 HP 2WD Tractor	Flail Mower			
	April	66 HP 2WD Tractor	Flail Mower			
	April	66 HP 2WD Tractor	Flail Mower			
	May	66 HP 2WD Tractor	Flail Mower			
Irrigation	March			Water	5.25	AcIn
	April			Water	10.50	AcIn
	May			Water	10.50	AcIn
	June			Water	10.50	AcIn
- Postharvest	July			Water	5.25	AcIn
Fertilize N - 80 Lbs/Acre 2X	March	66 HP 2WD Tractor	Spinner Spreader	46-0-0	50.00	Lbs N
- Postharvest	July	66 HP 2WD Tractor	Spinner Spreader	46-0-0	50.00	Lbs N
Weed Control – - Spot Spray 2X	March	66 HP 2WD Tractor	Weed Sprayer	Roundup	0.30	Pint
	May	66 HP 2WD Tractor	Weed Sprayer	Roundup	0.30	Pint
Disease Control – - Rust/Mildew 2X	March	66 HP 2WD Tractor	Orchard Sprayer	Rally 40W	5.00	Oz
	May	66 HP 2WD Tractor	Orchard Sprayer	Wettable Sulfur	10.00	Lb
Insect Control – - In-season Spray 3X	May	66 HP 2WD Tractor	Orchard Sprayer	Asana XL	9.60	Fl Oz
				Checkmate	1.30	Fl Oz
				Wettable Sulfur	10.00	Lb
	June	66 HP 2WD Tractor	Orchard Sprayer	Asana XL	9.60	Fl Oz
				Checkmate	1.30	Fl Oz
				Acaramite	0.75	Lb
	July	66 HP 2WD Tractor	Orchard Sprayer	Asana XL	9.60	Fl Oz
				Checkmate	1.30	Fl Oz
				Wettable Sulfur	6.00	Lb
Thin/Remove Fruit	May	Labor				
Summer Pruning	May	Labor				
Prop Limbs	May	55 HP 2WD Tractor	Utility Tractor	Labor		
Bin Distribution	July	66 HP 2WD Tractor	Bin Trailer #1			
		55 HP 2WD Tractor	Bin Trailer #2			
			Bin Trailer #3			
			Bin Trailer #4			
Hand Pick & Field Sort Fruit	July			Contract		
Haul Fruit	July			Custom		
Weed Control – - Dormant Strip Spray	October	66 HP 2WD Tractor	Weed Sprayer	Roundup	1.00	Pint
				Surflan 4	1.50	Pint
Pickup Truck Use	Annual	Pickup 1/2 ton				
ATV	Annual	ATV				